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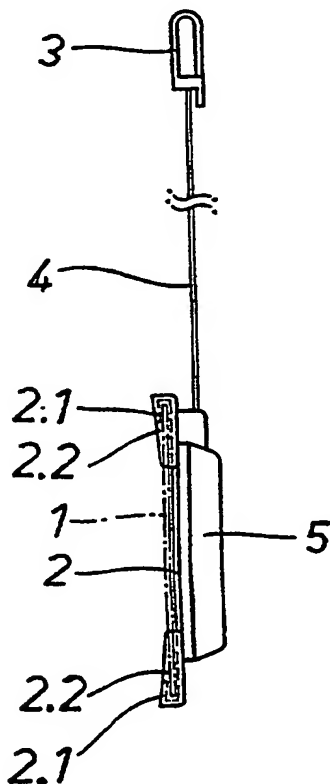
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[Continued on next page]

(54) Title: HOLDER FOR AN IDENTIFICATION CARD



(57) Abstract: The invention relates to an identification card holder (2), on the front side of which a replaceable identification card (1) can be placed. A spring-loaded yo-yo (5) is fastened and positioned on the reverse side of the holder (2), such that the yo-yo (5) remains partially or completely invisible as the card, along with its holder, is viewed from the front side. As the yo-yo is integrated with the holder, the result will be a small-sized, readily portable, and easy-to-handle assembly, which can be distanced from a bearer to the proximity of a code reader for an electric lock without releasing the suspension.



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## Holder for an identification card

The invention relates to a holder for an identification card, comprising a front side and a reverse side and provided with holding or gripping elements for the identification card for placing the replaceable identification card removably on the front side of the holder, a suspension clip for suspending the holder to a necklace or directly to a bearer's garment, as well as with a yo-yo present between the holder and the suspension clip and comprising a spring-loaded string winder and a string to whose end the suspension clip is attached.

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It is prior known to use a separate yo-yo for the suspension of an identification card by way of threading a suspension clip attached to the end of the yo-yo's string through a hole in the identification card. Thus, the identification card can be distanced from its bearer or carrier for example to the proximity of a code reader for an electric lock or some other actuator without releasing the suspension.

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On the other hand, it is prior known to attach identification cards to holders which can be suspended to a necklace or directly to a carrier's garment. Distancing or drawing away such identification cards from carrier to code reader is inconvenient as the carrier is often forced to assume an awkward posture to get in the immediate proximity of a code reader or to remove the card along with its holder or to remove the card from the holder (if the microchip carrying the identifier code is on the card).

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The existing yo-yos and card holders may also be suspended as extensions of each other by way of suspending a card holder to a suspension clip present at the end of a yo-yo string, whereby the card, along with its card holder, can be distanced from the bearer or carrier to the proximity of a code reader without releasing the suspension. Since the yo-yo and the card holder are separate from each other and suspended as extensions of each other, the result is a bulky, awkward and poorly manageable assembly which is not pleasant to carry

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in suspension from a garment or around the neck. Hence, it is conventional to use a yo-yo or a card holder as alternatives to each other, the selection depending on a particular application or necessity. In ski lifts, for example, cards suspended to a yo-yo are in general use while plain card holders, without a yo-yo, have become established in office use.

It is an object of the invention to provide a holder of the above type for an identification card, which is a small-sized, readily portable, and easy-to-handle assembly which can be distanced from a carrier to the proximity of a code reader without releasing the suspension.

This object is achieved by the invention on the basis of the characterizing features defined in the annexed claim 1.

The invention will now be described in more detail with reference to the accompanying drawings, in which

fig. 1 shows an identification card holder of the invention in a side view;

fig. 2 shows the holder of fig. 1 in a front side view;

fig. 3 shows an identification card insertable in the holder of fig. 2;

fig. 4 shows a card holder according to a second embodiment of the invention in a front side or card side view, the outlines of a yo-yo 5 being visible in dashed lines behind the card holder;

fig. 5 shows a clamp element 12 used in the embodiment of fig. 4 for clamping the yo-yo 5 behind a card holder 2 in a variety of operating positions, such that the card holder can be in a horizontal or vertical position;

fig. 5A shows the clamp element of fig. 5 in a view from the direction of an

arrow A in fig. 5;

fig. 6 shows the card holder of fig. 4 in a reverse side view, without a clamp element shown in fig. 5; and

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fig. 7 shows one example of an internal structure for the yo-yo 5 in a view of principle.

10 Figs. 1 and 2 depict a holder 2 for an identification card, comprising a substantially flat base plate, the lateral sides of which are provided with lugs 2.1 and the end sides with collars 2.2 rising adjacent to the corners, which together constitute holding and gripping elements for immobilizing an identification card 1. By virtue of the design of the holding and gripping elements 2.1, 2.2 and the flexibility of the identification card 1, such an  
15 identification card can be mounted removably on the front side of the holder 2. The holder 2 has its reverse side fitted with a yo-yo 5 positioned in such a way that the yo-yo 5 is partially or preferably entirely masked by the holder 2 and/or the holder-held card 1 as the card 1, along with its holder 2, is viewed from the front side. The card 1 may be provided e.g. with a photograph 11 of the bearer,  
20 a text space (not shown) carrying the bearer's name, and a microchip 10 containing an identifier code. The microchip 10 may be optionally mounted on the card holder 2. When the microchip 10 is brought e.g. to the proximity of a code reader for an electric lock or some other actuator, a release of the lock or some other preset function shall occur, the read-out code permitting. The  
25 features associated with the microchip 10 and the code reader do not constitute an object of this invention and are generally known in connection with access control systems.

30 The yo-yo 5 can be mounted on the back of the card holder 2 in a removable fashion, whereby the card holder 2 and the yo-yo 5 are required to have fastening lugs, designed as counterparts for each other and enabling a firm attachment e.g. by way of a snap fit. The yo-yo 5 can be mounted as an integral

part of the card holder 2 e.g. by glueing or by manufacturing a housing element for the yo-yo 5 at least partially from the same injection-moulded plastics material which is used for making the holder 2. What is essential is that the yo-yo 5 placed on the reverse side of the holder 2 is integrated as a part of the holder 2. Thus, when the card 1 is carried, no extra parts are visible as a suspension clip 3 present at the end of a yo-yo string 4 appears to join directly with the card holder 2, as shown in figure 2 with dash-and-dot lines. The suspension clip 3 may be accompanied by a necklace 9 or it can be fixed directly to a garment worn by the bearer, e.g. to the lip of a pocket.

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Figs. 4-6 depict more specifically a preferred structural solution of the invention, whereby the yo-yo can be attached to the back of a card holder in a removable fashion and in a variety of operating positions, such that the card is optionally either in a horizontal position or in a vertical position, as the case may be.

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Therefor, between the card holder 2 and the yo-yo 5 is fitted a separate clamp element 12, which is releasably securable in a locking aperture 23 of the card holder 2. The clamp element 12 is designed to accommodate the yo-yo 5 and provided with fastening lugs 24, 25 taking hold of the yo-yo 5 and having a configuration and design which depend on the design and/or protrusions of each available yo-yo, which the fastening lugs 24, 25 are adaptable to take hold of for immobilizing the yo-yo 5 relative to the clamp element 12.

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The clamp element 12 includes two clamp protrusions 14a, 14b taking hold behind collars 15 of the locking aperture 23 present in the card holder 2. The locking aperture 23 has its collars 15 provide an annular recess on the card-facing side of the card holder 2. The clamp protrusions 14a, 14b are flat tongues which are set in the recess formed by the collars 15 over on the internal side of the holder 2 (see fig. 4) after the clamp element 12 has been installed in its position on the card holder 2. In the present case, the clamp tongues 14a, 14b are obtained by placing a flat-shaped element 14 on top of a circumferentially circular boss 13 present in the clamp holder 12, the ends of said element extending out beyond the borders of the boss 13. The boss 13 is capable of

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rotating within the locking aperture 23. The locking aperture 23 has its collars 15 provided with two slots 23a, 23b of unequal widths for accommodating therethrough the clamp tongues 14a, 14b of respectively unequal widths.

5 The locking aperture collar 15 has its card-facing side provided with a wedge surface 16, the clamp tongue 14a being forcible thereover by turning the clamp element 12 relative to the card holder 2. Adjacent to the wedge surface 16 is a stepped border 17, the clamp tongue 14a colliding therewith, thus impeding a turnback of the clamp element 12. The locking aperture collar 15 has its card-facing side provided with another border surface 19, the clamp tongue 14a  
10 colliding therewith after turning the clamp element 12 about 90° from the position in which the same clamp tongue 14a has collided against the stepped border 17. The border surface 19 is preferably a steep wedge surface, which on the one hand functions as a stopper yet, on the other hand, allows the clamp tongue 14a to climb on top of a boss 18 present in the collar surface 15,  
15 whereby the clamp element 12 can be removed from the card holder 2 after being turned through full 360° for resetting the clamp tongue 14a in line with the slot 23a. The locking aperture collar 15 has its reverse side, upon which the clamp element 12 is set along with its yo-yo 5, provided with a retainer pin 20, and the clamp element 12 has the side thereof, which comes against the card  
20 holder 2, provided with two retainer slots 22 at a 90° angular distance from each other. Between the slots 22 is a guide groove 21 for the pin 20, having its ends provided with wedge surfaces to allow for the locking pin 20 an effortless climb from the groove 21 and a passage into the slot 22.

25 The identification card holder 2 and the yo-yo clamp element 12 shown in figs. 4-6 may both be manufactured from plastics by injection moulding. The use of a special clamp element 12 offers the benefit that the same card holder can be optionally placed in a horizontal or vertical position. In order to achieve this benefit, the structural details may depart in many ways from the details shown in  
30 figs. 4-6.

As for its design, the yo-yo 5 may be of any commercially available type, nor is it



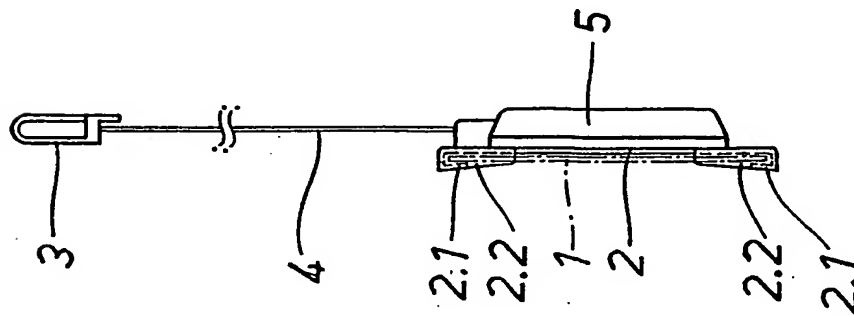
an object of this invention. In order to visualize the action, however, fig. 7 illustrates one structural solution of principle, comprising a winder 6 for winding a string 4 therearound and having inside a space for a spiral spring 7, one end of which is fastened to the string winder 6 and the other end is fastened to a fixed centre axle 8. The spiral spring 7 applies such a load on the string winder 6 that the string 4 is normally completely retracted around the winder 6. When the holder 2 is distanced from a bearer, the string 4 emerges from the yo-yo 5 and enables the holder 2 and the card 1 carried thereby to be drawn away from the bearer to a distance which is typically about half a meter at maximum. When the holder 2 is released, the spring-loaded yo-yo 5 retracts, through the intermediary of the string 4, the holder 2 back alongside the suspension clip 3.

Claims

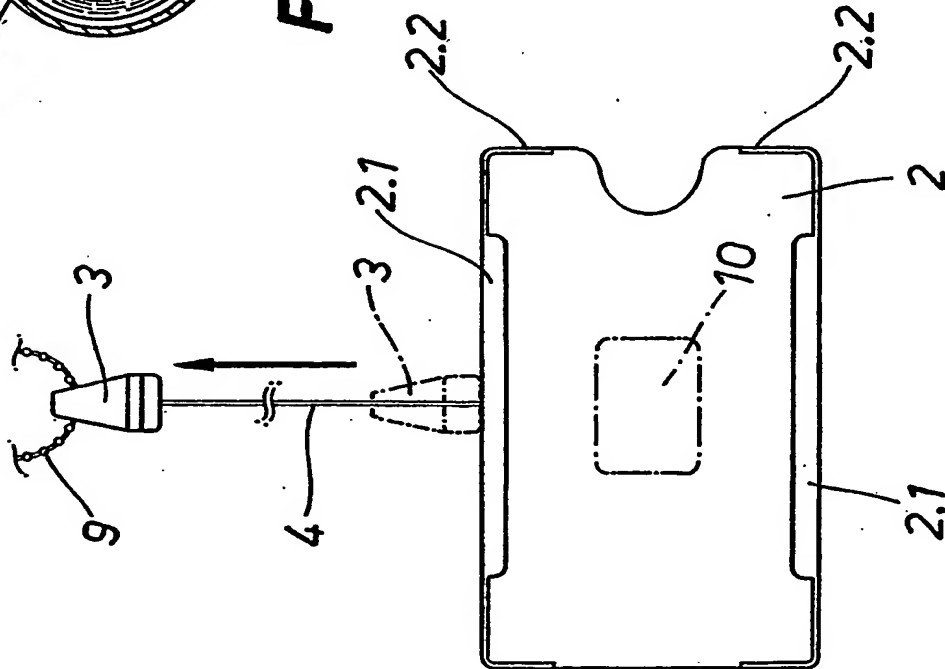
1. A holder (2) for an identification card (1), comprising a front side and a reverse side and provided with holding or gripping elements (2.1, 2.2) for the identification card (1) for placing the replaceable identification card (1) removably on the front side of the holder (2), a suspension clip (3) for suspending the holder (2) to a necklace (9) or directly to a bearer's garment, as well as with a yo-yo (5) present between the holder (2) and the suspension clip (3) and comprising a spring-loaded string winder (6) and a string (4) to whose end the suspension clip (3) is attached, characterized in that the yo-yo (5) is fastened and positioned on the reverse side of the card holder (2), such that the yo-yo (5) is partially or completely masked by the holder (2) and/or the card (1) as the card with its holder (1, 2) is viewed from the front side.
2. A holder as set forth in claim 1, characterized in that the card holder (2) and the yo-yo (5) have therebetween a clamp element (12), which is releasably insertable in a locking aperture (23) present in the card holder (2) and which is designed for accommodating the yo-yo (5) and provided with fastening lugs (24, 25) taking hold of the yo-yo (5).
3. A holder as set forth in claim 2, characterized in that the clamp element (12) is provided with two clamp protrusions (14a, 14b) taking a hold behind collars (15) of the locking aperture (23) present in the card holder (2).
4. A holder as set forth in claim 3, characterized in that the locking aperture (23) has its collars (15) constitute an annular recess on the card-facing side of the card holder (2), and that the clamp protrusions (14a, 14b) are flat tongues located in said recesses.
5. A holder as set forth in claim 4, characterized in that the locking aperture (23) has its collars (15) provided with two slots (23a, 23b) of unequal widths for accommodating therethrough the clamp tongues (14a, 14b) of respectively

unequal widths.

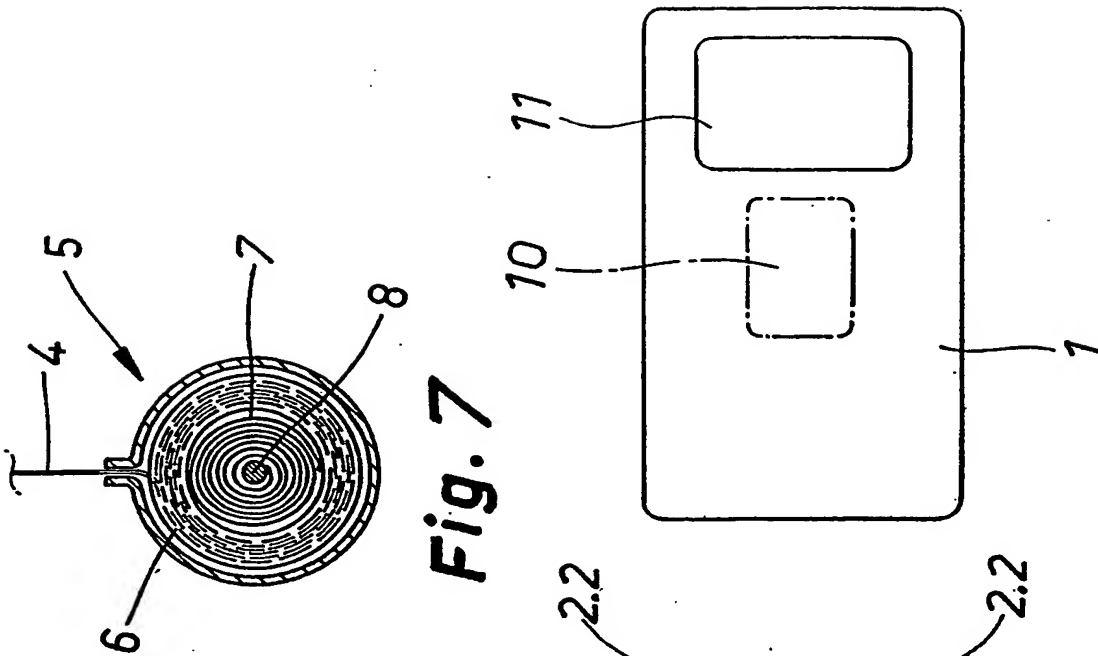
6. A holder as set forth in claim 4 or 5, characterized in that the locking aperture collar (15) has its card-facing side provided with a wedge surface (16), the clamp tongue (14a) being forcible thereover by turning the clamp element (12) relative to the card holder (2), and that alongside the wedge surface (16) is a stepped border (17), the clamp tongue (14a) colliding therewith, thus impeding a turn-back of the clamp element (12).
7. A holder as set forth in claim 6, characterized in that the locking aperture collar (15) has its card-facing side provided with another border surface (19), the clamp tongue (14a) colliding therewith after turning the clamp element (12) about 90° from the position in which the same clamp tongue (14a) has collided against the stepped border (17).
8. A holder as set forth in claim 6 or 7, characterized in that the locking aperture collar (15) has its reverse side, upon which the clamp element (12) is set along with its yo-yo (5), provided with a retainer pin (20), and the clamp element (12) has the side thereof, which comes against the card holder (2), provided with two retainer slots (22) at a 90° angular distance from each other.
9. A holder as set forth in claim 1, characterized in that the yo-yo (5) is fastened as an integral part of the card holder (2).
10. A holder as set forth in claim 1, characterized in that a microchip (10) containing an identifier code is attached to the holder (2) or the identification card (10).



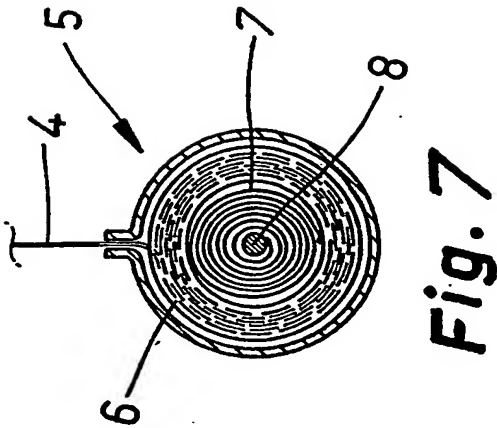
**Fig. 1**



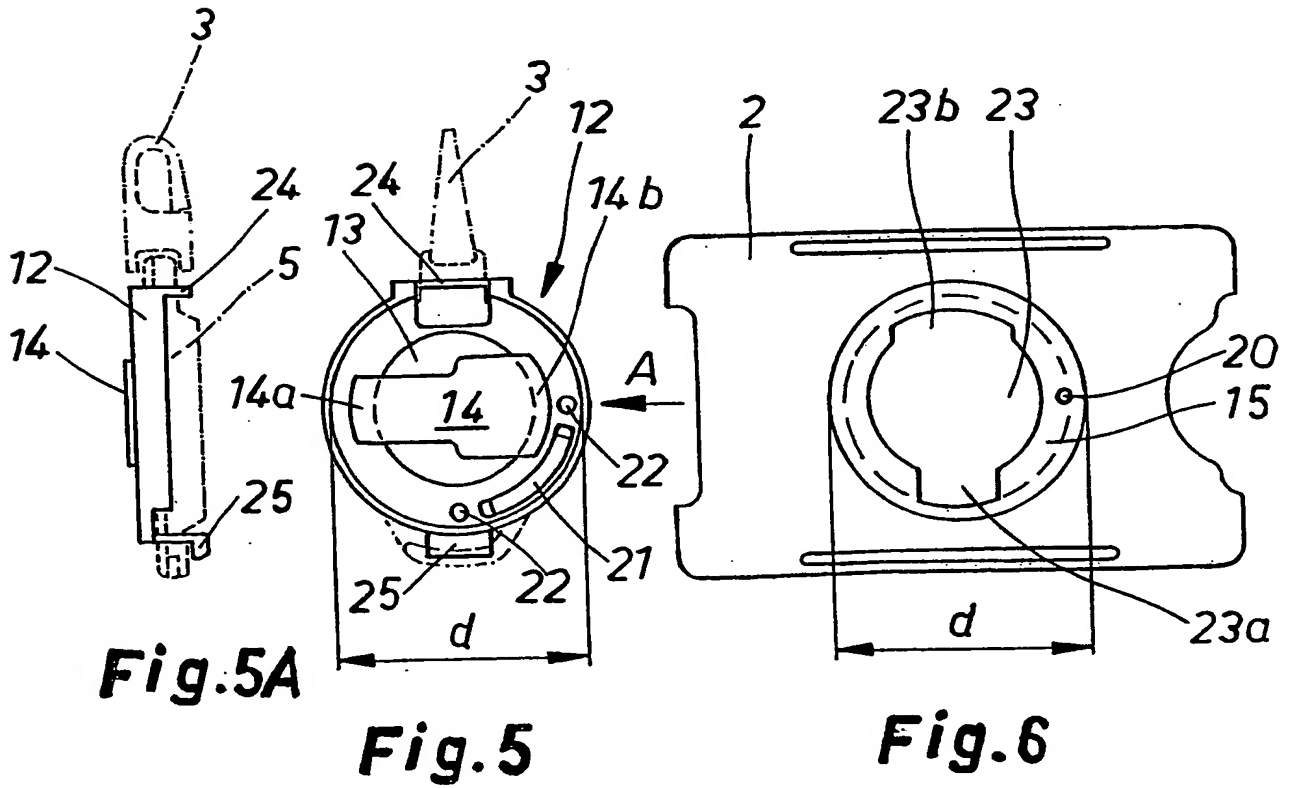
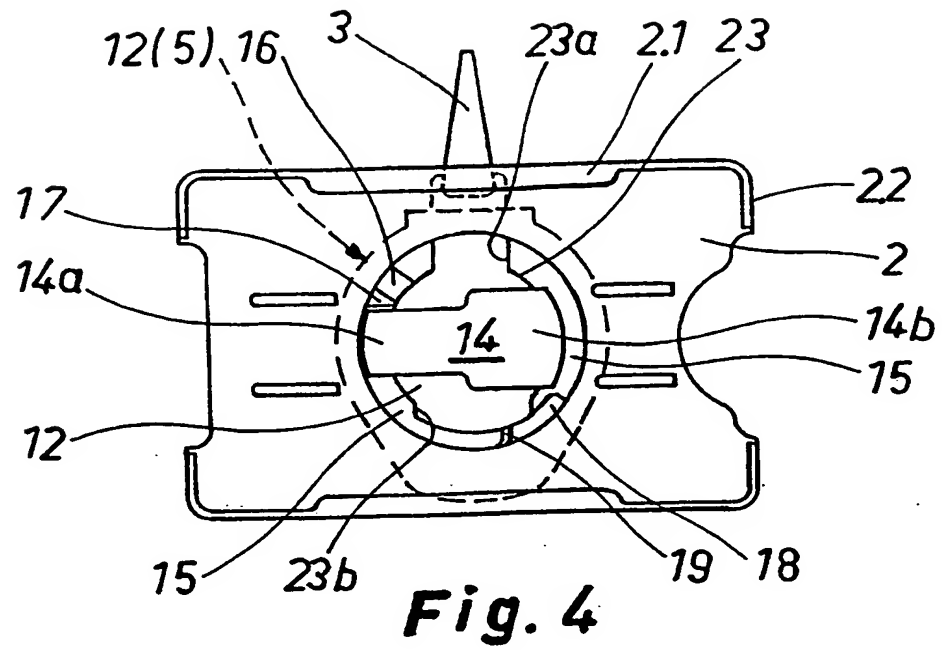
**Fig. 2**



**Fig. 3**



**Fig. 7**



# INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 00/00683

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G09F 3/20, A45C 11/18

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G09F, A45C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EDOC, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 9742852 A1 (OHLSON, K.L.), 20 November 1997 (20.11.97), figure 1, abstract --	1-10
A	US 5785221 A (P.M. BISHOP), 28 July 1998 (28.07.98), figure 1, abstract --	1-10
A	JP 9117316 A (TAKAGI S) 1997-05-06 (abstract) World Patents Index (online). London, U.K.: Derwent Publications, Ltd. (retrieved 2000-11-08). Retrieved from: EPO WPI Database. DW199728, Accession No. 1997-305532; & JP 9117316 A (TAKAGI SATOSHI) 1997-05-06 (abstract) (online) (retrieved on 2000-11-08). Retrieved from: EPO PAJ Database. -- -----	1-10

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

9 November 2000

Date of mailing of the international search report

20 -11- 2000

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**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International application No.

PCT/FI 00/00683

WO	9742852	A1	20/11/97	AU	2919297	A	05/12/97
				EP	0975247	A	02/02/00
				SE	507703	C	06/07/98
				SE	9601823	A	14/11/97

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US	5785221	A	28/07/98	NONE			
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## PCT REQUEST

6155PCRO

Original (for SUBMISSION) - printed on 11.08.2000 10:44:23 AM

0 0-1	For receiving Office use only International Application No.	PCT/FI 00 / 00683
0-2	International Filing Date	11 AUG 2000 (11-08-2000)
0-3	Name of receiving Office and "PCT International Application"	The Finnish Patent Office PCT International Application
0-4 0-4-1	Form - PCT/RO/101 PCT Request Prepared using	PCT-EASY Version 2.91 (updated 10.05.2000)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	National Board of Patents and Registration (Finland) (RO/FI)
0-7	Applicant's or agent's file reference	6155PCRO
I	Title of invention	HOLDER FOR AN IDENTIFICATION CARD
II II-1 II-2 II-4 II-5	Applicant This person is: Applicant for Name Address:	applicant only all designated States except US HELSINGIN AVAINALA OY Tehtaankatu 25 FIN-00150 Helsinki Finland
II-6	State of nationality	FI
II-7	State of residence	FI
III-1 III-1-1 III-1-2 III-1-4 III-1-5	Applicant and/or inventor This person is: Applicant for Name (LAST, First) Address:	applicant and inventor US only SAARI, Simo Tehtaankatu 25 FIN-00250 Helsinki Finland
III-1-6	State of nationality	FI
III-1-7	State of residence	FI



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IV-1	<b>Agent or common representative; r address for correspondence</b> The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	<b>agent</b>
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IV-1-5	e-mail	palei@leitzinger.fi
V	<b>Designation of States</b>	
V-1	<b>Regional Patent</b> (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AP: GH GM KE LS MW MZ SD SL SZ TZ UG ZW and any other State which is a Contracting State of the Harare Protocol and of the PCT EA: AM AZ BY KG KZ MD RU TJ TM and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT EP: AT BE CH&LI CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE and any other State which is a Contracting State of the European Patent Convention and of the PCT OA: BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG and any other State which is a member State of OAPI and a Contracting State of the PCT
V-2	<b>National Patent</b> (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AE AG AL AM AT (patent and utility model) AU AZ BA BB BG BR BY BZ CA CH&LI CN CR CU CZ (patent and utility model) DE (patent and utility model) DK (patent and utility model) DM DZ EE (patent and utility model) ES FI (patent and utility model) GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK (patent and utility model) SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

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RO/FI

V-5	<b>Precautionary Designation Statement</b> In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit.	
V-6	<b>Exclusion(s) from precautionary designations</b>	NONE
VI-1	<b>Priority claim of earlier national application</b>	
VI-1-1	Filing date	12 August 1999 (12.08.1999)
VI-1-2	Number	991712
VI-1-3	Country	FI
VI-2	<b>Priority document request</b> The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):	VI-1
VII-1	<b>International Searching Authority Chosen</b>	Swedish Patent Office (ISA/SE)
VIII	<b>Check list</b>	number of sheets      electronic file(s) attached
VIII-1	Request	4      -
VIII-2	Description	5      -
VIII-3	Claims	2      -
VIII-4	Abstract	1      abstract.txt
VIII-5	Drawings	2      -
VIII-7	TOTAL	14
VIII-8	<b>Accompanying items</b>	paper document(s) attached      electronic file(s) attached
VIII-16	Fee calculation sheet	✓      -
VIII-16	PCT-EASY diskette	-      diskette
VIII-17	Other (specified):	Official Action      -
VIII-18	<b>Figure of the drawings which should accompany the abstract</b>	1
VIII-19	<b>Language of filing of the international application</b>	Finnish
IX-1	<b>Signature of applicant or agent</b>	
IX-1-1	Name	LEITZINGER OY
IX-1-2	Name of signatory	Rauno Ollikainen

## FOR RECEIVING OFFICE USE ONLY

10-1	<b>Date of actual receipt of the purported international application</b>	11 AUG 2000	(11-08-2000)
10-2	<b>Drawings:</b>		
10-2-1	Received		
10-2-2	Not received		

## PCT REQUEST

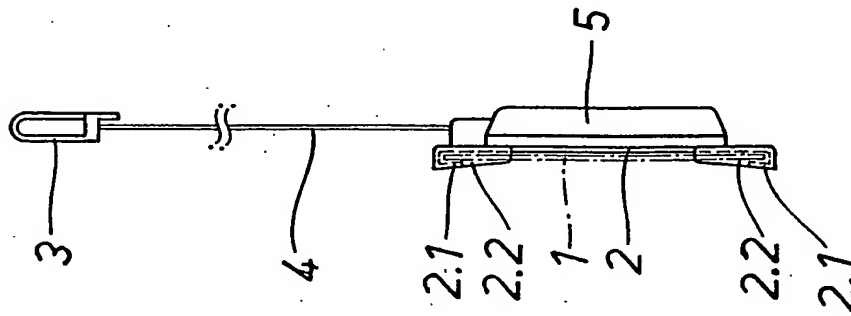
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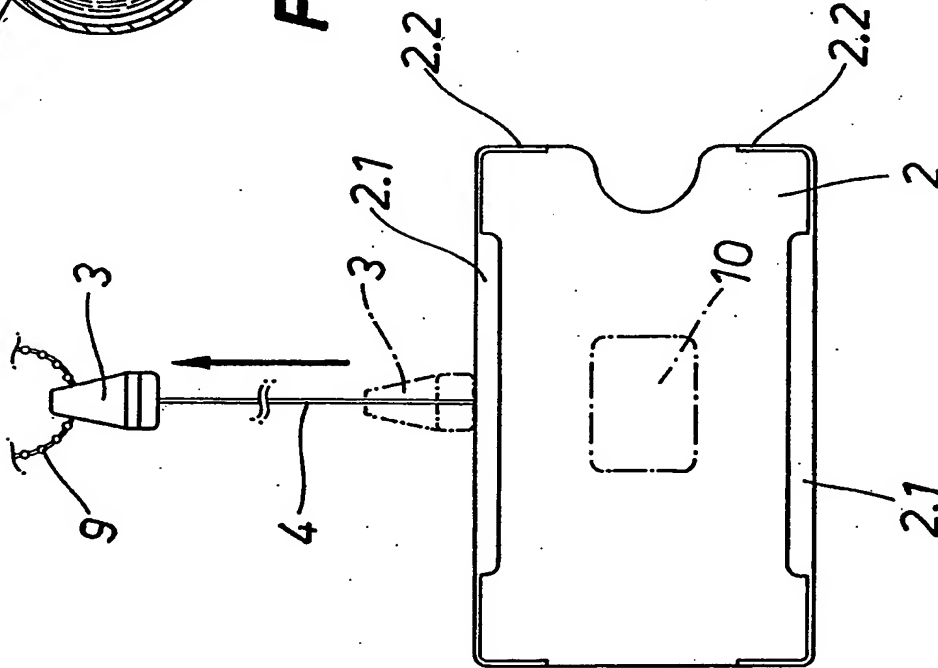
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/SE
10-6	Transmittal of search copy delayed until search fee is paid	

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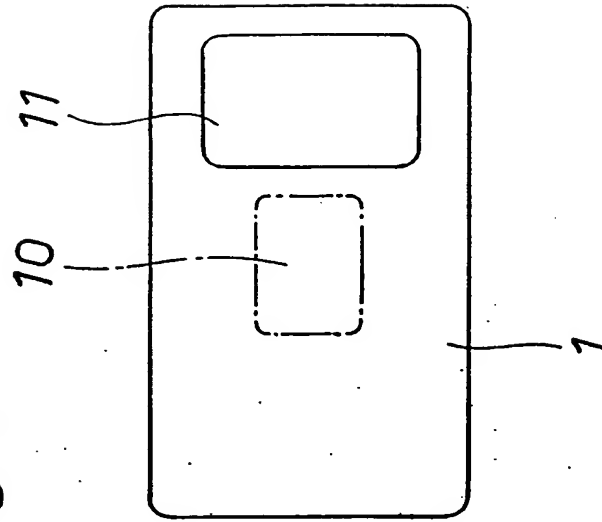
11-1	Date of receipt of the record copy by the International Bureau	28 AUGUST 2000	28.08.00
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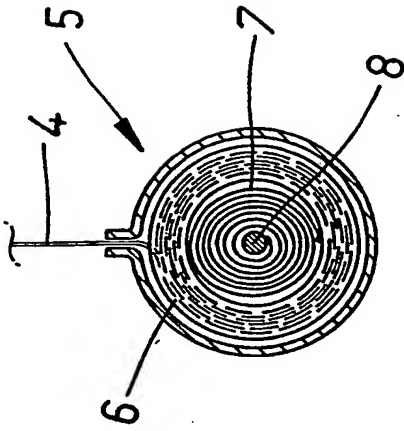
**Fig. 1**



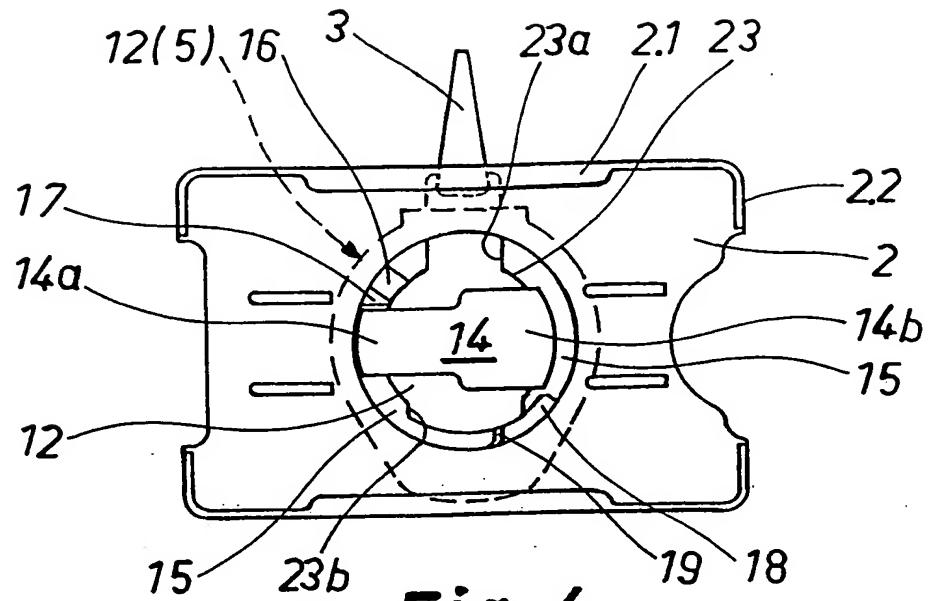
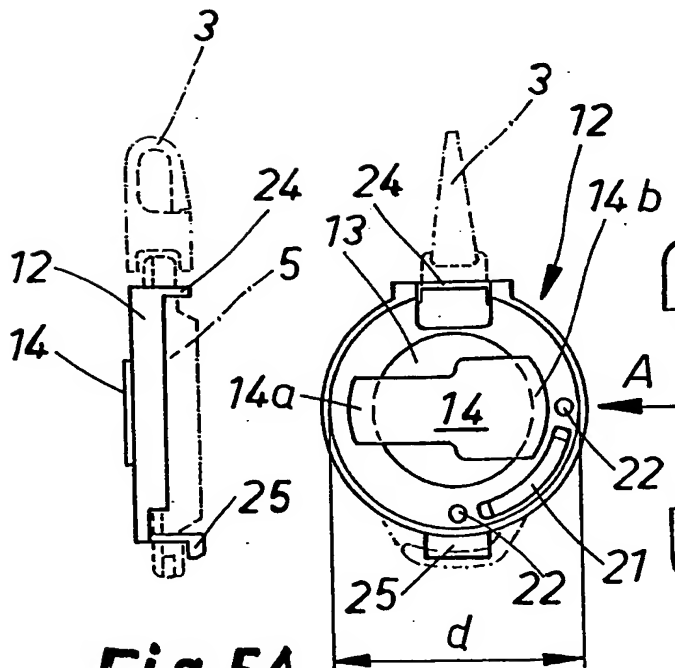
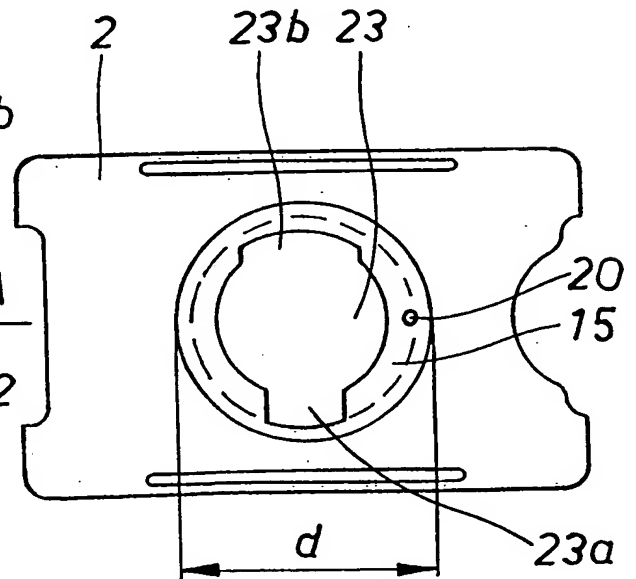
**Fig. 2**



**Fig. 3**



**Fig. 7**

**Fig. 4****Fig. 5A****Fig. 5****Fig. 6**

## Tunnistekortin pidin

- Keksinnön kohteena on tunnistinkortin pidin, jolla on etusivu ja takasivu ja jossa on tunnistekortin pidin- tai tartuntaelimet vaihdettavan tunnistekortin kiinnittä-  
5 seksi irrotettavasti pitimen etusivulle, ripustuspinne pitimen ripustamiseksi kaulaketjuun tai suoraan käyttäjän vaatteeseen, sekä pitimen ja ripustuspinteen välissä oleva jojo, johon kuuluu jousikuormitteinen lankakela ja lanka, jonka päähän ripustuspinne on kiinnitetty.
- 10 On tunnettua käyttää erillistä jojoa tunnistekortin ripustamiseen siten, että jojon langan päähän kiinnitetty ripustuspinne on pujotettu tunnistuskortissa olevan reiän läpi. Tällöin tunnistekortti voidaan loitontaa käyttäjästä esim. sähkölukon tai muun toimilaitteen koodilukijan läheisyyteen ripustusta irrottamatta.
- 15 Toisaalta on tunnettua kiinnittää tunnistekortteja pitimiin, jotka voidaan ripustaa kaulaketjuun tai suoraan käyttäjän vaatteeseen. Tällaisten tunnistekorttien loitontaminen käyttäjästä koodilukijaan on hankalaa, koska käyttäjän on mentävä usein hankalassa asennossa hyvin lähelle koodilukijaa tai irrotettava kortti pitimiseen tai irrotettava kortti pitimestä (jos tunnistekoodin sisältävä mikrosiru  
20 on kortissa).
- Olemassa olevia jojoja ja kortin pitimiä voidaan myös ripustaa toistensa jatkeeksi siten, että korttipidin ripustetaan jojon langan päässä olevaan ripustuspinteen, jolloin kortti korttipitimiseen on loitontettavissa käyttäjästä koodilukijan  
25 läheisyyteen ripustusta irrottamatta. Kun jojo ja korttipidin ovat toisistaan erillisiä ja ripustetut toistensa jatkeeksi, muodostuu suurikokoinen, kömpelö ja vaikeasti hallittava kokonaisuus, jota ei ole miellyttävä kantaa vaatteeseen tai kaulaan ripustettuna. Tästä syystä on tavanomaista käyttää jojoa tai korttipidintä toistensa vaihtoehtoina, valinnan riippuessa käyttötilanteesta tai tarpeesta.
- 30 Esim. hiihtohisseissä jojoon ripustetut kortit ovat yleisessä käytössä, kun taas virastoissa pelkät kortinpitimet ilman jojoa ovat vakiintuneet.

Keksinnön tarkoituksena on saada aikaan alussa mainittua tyyppiä oleva tunnistekortin pidin, joka on pienikokoinen, helposti mukana kannettava ja helppokäyttöinen kokonaisuus, joka voidaan loitontaa käyttäjästä koodilukijan läheisyyteen ripustusta irrottamatta.

5

Tämä tarkoitus saavutetaan keksinnöllä oheisessa patenttivaatimuksessa 1 määriteltyjen tunnusmerkkien perusteella.

Seuraavassa keksintöä selostetaan lähemmin viittaamalla oheisiin piirustuksiin,  
10 joissa

kuvio 1 esittää keksinnön mukaista tunnistekortin pidintä sivulta nähtynä;

kuvio 2 esittää kuvion 1 mukaista pidintä etusivun puolelta nähtynä;  
15

kuvio 3 esittää kuvion 2 mukaiseen pitimeen asennettavaa tunnistekorttia;

kuvio 4 esittää keksinnön toisen suoritusmuodon mukaista korttipidintä etusivun puolelta eli kortin puoleiselta sivulta nähtynä, jojon 5 ääriviivojen  
20 näkyessä katkoviivoin korttipitimen takaa;

kuvio 5 esittää kuvion 4 mukaisessa suoritusmuodossa käytettävää lukitusosaa 12, jolla jojo 5 on lukittavissa korttipitimen 2 taakse erilaisiin käyttöasentoihin niin, että korttipidin voi olla vaaka- tai pystyasennossa;  
25

kuvio 5A esittää kuvion 5 mukaista lukitusosaa kuvion 5 nuolen A suunnasta nähtynä;

30 kuvio 6 esittää kuvion 4 mukaista korttipidintä takasivulta nähtynä, ilman kuvion 5 mukaista lukitusosaa; ja

kuvio 7 esittää periaatekuvana yhtä esimerkkiä jojon 5 sisäisestä rakenteesta.

Kuvioiden 1 ja 2 mukaiseen tunnistekortin pitimeen 2 kuuluu pääasiassa tasomainen pohjalevy, jonka sivureunoissa on korvakkeet 2.1 ja päätyreunoissa kulmien lähellä kohoavat reunukset 2.2, jotka yhdessä muodostavat pidin- ja tartuntaelimet tunnistekortin 1 pitämiseksi paikallaan. Pidin- ja tartuntaelimien 2.1, 2.2. muotoilun ja tunnistekortin 1 taipuisuuden ansiosta tunnistekortti voidaan kiinnittää irrotettavasti pitimen 2 etusivulle. Pitimen 2 takasivulle on kiinnitetty jojo 5 siten sijoitettuna, että jojo 5 on osittain tai edullisesti kokonaan pitimen 2 ja/tai pitimessä olevan kortin 1 peittämänä, kun korttia 1 pitimineen 2 katsotaan etusivun puolelta. Kortissa 1 voi olla esim. käyttäjän valokuva 11, käyttäjän nimellä varustettu tekstikenttä (ei esitetty) ja mikrosiru 10, joka sisältää tunnistekoodin. Mikrosiru 10 voi olla kiinnitetty vaihtoehtoisesti korttipitimeen 2. Kun mikrosiru 10 viedään esim. sähkölukon tai muun toimilaitteen koodilukijan läheisyyteen, tapahtuu lukon avaus tai muu ennalta määrätty toiminne, jos luettu koodi sen sallii. Mikrosiruun 10 ja koodilukijaan liittyvät piirteet eivät ole tämän keksinnön kohteena ja ne ovat yleisesti tunnettuja kulun valvonnan yhteydessä.

20

Jojo 5 voidaan kiinnittää korttipitimen 2 taakse irrotettavasti, jolloin korttipitimessä 2 ja jojossa 5 tarvitaan toistensa vastinosiksi muotoillut kiinnityskorvakkeet, jotka mahdollistavat pysyvän kiinnityksen esim. napsahdusliitoksella. Jojo 5 voi olla kiinnitetty korttipitimen 2 kiinteäksi osaksi esim. liimaamalla tai valmistamalla jojon 5 kotelo-osa ainakin osittain samasta ruiskupuristetusta muovimateriaalista, josta pidin 2 on valmistettu. Olennaista on, että pitimen 2 takasivulla sijaitseva jojo 5 on integroitu pitimen 2 osaksi. Tällöin korttia 1 kannettaessa mitään ylimääräisiä osia ei ole näkyvissä, vaan jojon langan 4 päässä oleva ripustuspinne 3 näyttää liittyvän suoraan korttipitimeen 2 kuten kuviossa 2 on pistekatkoviivoin näytetty. Ripustuspinteeseen 3 voi liittyä kaulaketju 9 tai se voi olla kiinnitetty suoraan käyttäjän vaatteeseen, esim. taskun reunaan.

30



Kuvioissa 4-6 on esitetty tarkemmin keksinnön edullinen rakenneratkaisu, jolla jojo voidaan kiinnittää korttipitimen taakse irrotettavasti ja erilaisiin käyttöasentoihin siten, että kortti on joko vaaka-asennossa tai pystyasennossa valinnan mukaan. Tätä varten on korttipitimen 2 ja jojon 5 väliin sijoitettu erillinen lukitusosa 12, joka on irrotettavasti lukittavissa korttipitimen 2 lukitusaukkoon 23. Lukitusosa 12 on muotoiltu vastaanottamaan jojo 5 ja on varustettu jojoon 5 tarttuvilla kiinnityskorvakkeilla 24, 25, joiden rakenne ja muotoilu riippuu kulloinkin käytettävissä olevan jojon muotoilusta ja/tai ulkonemista, joihin kiinnityskorvakkeet 24, 25 on saatettavissa tarttumaan jojon 5 pidättämiseksi paikoil-  
laan lukitusosaan 12 nähden.

Lukitusosassa 12 on kaksi lukitusulkonemaa 14a, 14b, jotka tarttuvat korttipitimen 2 lukitusaukon 23 reunojen 15 taakse. Lukitusaukon 23 reunat 15 muodostavat rengasmaisen syvennyksen korttipitimen 2 kortin puoleiselle sivulle. Lukitusulkonemat 14a, 14b ovat litteitä kielekkeitä, jotka sijaitsevat reunojen 15 muodostamassa syvennyksessä pitimen 2 sisäsivun puolella (katso kuvio 4), kun lukitusosa 12 on asennettu paikoilleen korttipitimeen 2. Esitetyssä tapauksessa lukituskielekkeet 14a, 14b on saatu aikaan sijoittamalla lukituspitimessä 12 olevan, kehältään ympyrämäisen kohouman 13 päälle lattamainen osa 14, jonka päät ulkonevat kohouman 13 reunojen ohi. Kohouma 13 mahtuu pyörimään lukitusaukossa 23. Lukitusaukon 23 reunoissa 15 on kaksi leveydeltään erilaista lovea 23a, 23b, joista vastaavasti leveydeltään erilaiset lukituskielekkeet 14a ja 14b mahtuvat.

Lukitusaukon reunan 15 kortinpuoleisella sivulla on kiilapinta 16, jonka yli lukituskieleke 14a on pakotettavissa kiertämällä lukitusosaa 12 korttipitimen 2 suhteen. Kiilapinnan 16 vieressä on porrasmainen vaste 17, johon lukituskieleke 14a törmää ja estää siten lukitusosan 12 takaisinpäin kiertämisen. Lukitusaukon reunan 15 kortinpuoleisella sivulla on toinen vastepinta 19, johon lukituskieleke 14a törmää, kun lukitusosaa 12 on kierretty noin 90° asennosta, jossa sama lukituskieleke 14a on ollut porrasmaiseen vasteeseen 17 törmänneenä. Vastepinta 19 on edullisesti jyrkkä kiilapinta, joka toimii yhtäältä vasteenä, mutta toisaalta sallii lukituskielekkeen 14a kohoamisen reunapinnassa 15

- 15 olevan kohouman 18 päälle, jolloin lukitusosa 12 voidaan irrottaa korttipitimestä 2, kun sitä on kierretty täydet  $360^\circ$ , jolloin lukituskieleke 14a tulee uudelleen loven 23a kohdalle. Lukitusaukon reunan 15 takasivulla, jonka päälle lukitusosa 12 jojoineen 5 asetetaan, on pidäketappi 20 ja lukitusosan 12 sillä
- 5 sivulla, joka tulee vasten korttipidintä 2, on kaksi pidinkoloa 22  $90^\circ$  kulmavälin päässä toisistaan. Kolojen 22 välissä on tapin 20 ohjainura 21, jonka päissä on kiilapinnat, jotta lukitustappi 20 pääsee helposti nousemaan urasta 21 ja siirtymään koloon 22.
- 10 Kuvioissa 4-6 esitetty tunnistekortin pidin 2 ja jojon lukitusosa 12 voidaan molemmat valmistaa ruiskuvalamalla muovista. Erityisen lukitusosan 12 käytöllä saavutetaan se etu, että sama korttipidin voidaan sijoittaa vaaka- tai pystyasentoon valinnan mukaan. Tämän edun saavuttamiseksi rakenteelliset yksityiskohdat voivat monin tavoin poiketa kuvioissa 4-6 esitetyistä yksityiskohdista.
- 15 Jojon 5 rakenne voi olla mitä tahansa kaupallisesti saatavaa tyyppiä eikä se ole tämän keksinnön kohteena. Toiminnan havainnollistamiseksi kuviossa 7 on kuitenkin esitetty yksi periaatteellinen rakenneratkaisu, johon kuuluu kela 6, jonka ympärille lanka 4 on kierretty ja jonka sisäpuolella on tila spiraalijouselle
- 20 7, jonka toinen pää on kiinnitetty lankakelaan 6 ja toinen pää on kiinnitetty kiinteään keskiakseliin 8. Spiraalijousi 7 kuormittaa lankakelaa 6 siten, että lanka 4 on normaalisti kokonaan sisäänvedettynä kelan 6 ympärille. Kun pidintä 2 loitonnetaan käyttäjästä, lanka 4 tulee ulos jojosta 5 ja mahdollistaa pitimen 2 ja siinä olevan kortin 1 loitontamisen käyttäjästä matkan, joka on tyyppillisesti maksimissaan noin puoli metriä. Kun pidin 2 vapautetaan, jousikuormitteen jojo 5 vetää langan 4 välityksellä pitimen 2 takaisin ripustuspinteen 3 viereen.
- 25

Patenttivaatimukset

1. Tunnistinkortin (1) pidin (2), jolla on etusivu ja takasivu ja jossa on tunniste-  
kortin (1) pidin- tai tartuntaelimet (2.1, 2.2) vaihdettavan tunnistekortin (1) kiin-  
5 nittämiseksi irrotettavasti pitimen (2) etusivulle, ripustuspinne (3) pitimen (2)  
ripustamiseksi kaulaketjuun (9) tai suoraan käyttäjän vaatteeseen, sekä pitimen  
(2) ja ripustuspinteen (3) välissä oleva jojo (5), johon kuuluu jousikuormitteinen  
lankakela (6) ja lanka (4), jonka päähän ripustuspinne (3) on kiinnitetty, **tunnet-**  
**tu** siitä, että jojo (5) on kiinnitetty korttipitimen (2) takasivulle siten sijoitettuna,  
10 että jojo (5) on osittain tai kokonaan pitimen (2) ja/tai kortin (1) peittämänä kun  
korttia pitimineen (1,2) katsotaan etusivun puolelta.

2. Patenttivaatimuksen 1 mukainen pidin, **tunnettu** siitä, että korttipitimen (2) ja  
jojon (5) välissä on lukitusosa (12), joka on irrotettavasti lukittavissa korttipiti-  
15 men (2) lukitusaukkoon (23) ja joka on muotoiltu vastaanottamaan jojo (5) ja  
varustettu jojoon (5) tarttuvilla kiinnityskorvakkeilla (24, 25).

3. Patenttivaatimuksen 2 mukainen pidin, **tunnettu** siitä, että lukitusosassa (12)  
on kaksi lukitusulkonemaa (14a, 14b), jotka tarttuvat korttipitimen (2) luki-  
20 tusaukon (23) reunojen (15) taakse.

4. Patenttivaatimuksen 3 mukainen pidin, **tunnettu** siitä, että lukitusaukon (23)  
reunat (15) muodostavat rengasmaisen syvennyksen korttipitimen (2) kortin-  
puoleiselle sivulle, ja että lukitusulkonemat (14a, 14b) ovat litteitä kielekkeitä,  
25 jotka sijaitsevat mainitussa syvennyksessä.

5. Patenttivaatimuksen 4 mukainen pidin, **tunnettu** siitä, että lukitusaukon (23)  
reunoissa (15) on kaksi leveydeltään erilaista lovea (23a, 23b), joista vastaa-  
vasti leveydeltään erilaiset lukituskielekkeet (14a, 14b) mahtuvat.

30

6. Patenttivaatimuksen 4 tai 5 mukainen pidin, **tunnettu** siitä, että lukitusaukon  
reunan (15) kortinpuoleisella sivulla on kiilapinta (16), jonka yli lukituskieleke  
(14a) on pakotettavissa kiertämällä lukitusosaa (12) korttipitimen (2) suhteen,

ja että kiilapinnan (16) vieressä on porrasmainen vaste (17), johon lukituskieleke (14a) törmää ja estää siten lukitusosan (12) takaisinpäin kiertämisen.

7. Patenttivaatimuksen 6 mukainen pidin, **tunnettu** siitä, että lukitusaukon reunan (15) kortinpuoleisella sivulla on toinen vastepinta (19), johon lukituskieleke (14a) törmää, kun lukitusosaa (12) on kierretty noin 90° asennosta, jossa sama lukituskieleke (14a) on ollut porrasmaiseen vasteeseen (17) törmänneenä.
- 10 8. Patenttivaatimuksen 6 tai 7 mukainen pidin, **tunnettu** siitä, että lukitusaukon reunan (15) takasivulla, jonka päälle lukitusosa (12) jojoineen (5) asetetaan, on pidäketappi (20) ja lukitusosan (12) sillä sivulla, joka tulee vasten korttipidintä (2), on kaksi pidinkoloa (22) 90° kulmavälin päässä toisistaan.
- 15 9. Patenttivaatimuksen 1 mukainen pidin, **tunnettu** siitä, että jojo (5) on kiinnitetty korttipitimen (2) kiinteäksi osaksi.
10. Patenttivaatimuksen 1 mukainen pidin, **tunnettu** siitä, että tunnistekoodin sisältävä mikrosiru (10) on kiinnitetty pitimeen (2) tai tunnistekorttiin (10).

(57) Tiivistelmä

Keksinnön kohteena on tunnistekortin pidin (2), jonka etusivulle vaihdettava tunnistekortti (1) voidaan asettaa. Jousikuormitteinen jojo (5) on kiinnitetty pitimen (2) takasivulle siten sijoitettuna, että jojo (5) jää osittain tai kokonaan näkymättömäksi kun korttia pitimineen katsotaan etusivun puolelta. Jojon ollessa integroituna korttipitimeen, muodostuu pienikokoinen, helposti kannettava ja helppokäyttöinen kokonaisuus, joka voidaan loitontaa käyttäjästä sähkölukon koodilukijan läheisyyteen ripustusta irrottamatta.

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 6155PCRO	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/FI00/00683	International filing date (day/month/year) 11.08.2000	Priority date (day/month/year) 12.08.1999
International Patent Classification (IPC) or national classification and IPC <sub>7</sub> G09F 3/20, A45C 11/18		
Applicant Helsingin Avainala OY et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  05.02.2001	Date of completion of this report  05.11.2001
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 08-667 72 88	Authorized officer  Helena Rennermalm / MRo Telephone No. 08-782 25 00

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FI00/00683

**I. Basis of the report****1. With regard to the elements of the international application:\***

- ☒ the international application as originally filed
- ☐ the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the claims:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement) under article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

**2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.**These elements were available or furnished to this Authority in the following language English which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

**3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:**

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

**4. ☐ The amendments have resulted in the cancellation of:**

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheet/fig \_\_\_\_\_

**5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).\*\***

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FI00/00683

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	<u>1-10</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-10</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-10</u>	YES
	Claims		NO

### 2. Citations and explanations (Rule 70.7)

#### Cited documents:

1. WO 9742852 A1
2. US 5785221 A
3. JP 9117316 A

The documents cited in the International Search Report represent background art.

The invention defined in claims 1-10 is not disclosed by any of these documents.

None of the cited documents gives any indication towards the holder for an identification card. No relevant combination of the cited documents would lead a person skilled in the art to the invention defined in the claims.

Therefore, the invention defined in claims 1-10 is novel and is considered to involve an inventive step. It is also considered to be industrially applicable.